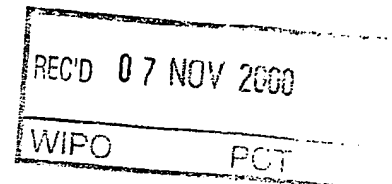




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#6

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WITNESS my hand this  
Twenty-sixth day of October 2000

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## DRAIN ACCESSORIES

- 5 This invention relates to drainage accessories. More particularly, this invention relates to a drainage accessory for use in construction, to a kit for a drainage accessory for use in construction and to a method of construction.

10 At present, drainpipes are usually positioned in a substrate to be flush with or to extend partially from the substrate. Once this has been done, a layer of screed is formed on the substrate. A bed of tiles may or may not then be positioned on the screed.

15 It has been found that, during construction, screed material is often disposed of in the drainpipe. Where tiles are laid on the screed layer, the tiles are broken off at a region about the drainpipe to provide a location in which a drain grate can be positioned. These pieces of broken tile are often also disposed of in the drainpipe.

20 The waste screed and tile pieces can cause substantial problems at a later stage. In fact, it is well known in the plumbing trade that initial call backs on new buildings are usually due to blockages resulting from material disposed of in drainpipes.

25 A problem presently facing tilers is the provision of a level mark which the tiler can use to determine the thickness of screed or bedding to be placed on the substrate. At present, tilers have difficulty in achieving a consistently level surface of screed because of the lack of a central mark that they can use as a reference point.

30

It will be appreciated that it would be desirable should a means be devised that would address the above issues.

According to a first aspect of the invention, there is provided a drainage accessory for use in construction, the accessory including

5

a conduit that has an inlet end and an outlet end, the outlet end being mountable to a drainpipe so that the conduit and the drainpipe are in fluid communication;

a removable closure that is mounted on the inlet end of the conduit to close the conduit when not in use so that the ingress of detritus into the drainpipe is inhibited; and

10

a sealing member having a flange portion and a body portion, the body portion defining a passage in which the conduit is received and the flange portion being positioned to extend radially from the conduit when the conduit is received in the passage, the conduit and the body portion being mounted to a drainpipe positioned in a substructure, with the flange portion overlying an upper surface of the substructure.

15

According to a second aspect of the invention, there is provided a kit for a drainage accessory, the kit including

a conduit that has an inlet end and an outlet end;

20

a removable closure that is mounted on the inlet end of the conduit to close the conduit when not in use; and

a sealing member having a flange portion and a body portion that defines a passage, the conduit being mountable to the body portion so that the outlet end of the conduit and the passage are in fluid communication with each other.

25

According to a third aspect of the invention, there is provided a drainage accessory for use in construction, the drainage accessory including

30

a conduit that has an inlet end and an outlet end, the outlet end of the conduit being mountable to a drainpipe so that the conduit and the drainpipe are in fluid communication with each other;

a reference level means that is positioned on the conduit and is configured so that, when the conduit is mounted on the drainpipe, the reference level means provides at least a reference level for a screed to be formed on a substructure; and

a sealing member having a flange portion and a body portion, the body portion defining a passage in which the conduit is receivable and the flange portion being positioned to extend radially from the conduit when the conduit is received in the passage, the conduit and the body portion being mountable to a drainpipe positioned in a substructure, with the flange portion overlying an upper surface of the substructure.

According to a fourth aspect of the invention, there is provided a kit for a drainage accessory, the kit including

a conduit that has an inlet end and an outlet end;  
a reference level means that is positioned on the conduit and is configured so that, when the conduit is mounted on a drainpipe, the reference level means provides at least a reference level for a screed to be formed on a substructure; and

a sealing member having a flange portion and a body portion that defines a passage, the conduit being mountable to the body portion so that the outlet end of the conduit and the passage are in fluid communication with each other.

According to a fifth aspect of the invention, there is provided a method of construction, the method including the steps of:

mounting a sealing member of any one of the drainage accessories described above on to a drainpipe so that a passage defined by a body of the sealing member is in fluid communication with the passage, and a flange of the sealing member overlays a region of a substructure in which the drainpipe is positioned; and

mounting a conduit of any one of the drainage accessories described herein to the sealing member so that the outlet end of the conduit is in fluid communication with the sealing member.

The reference level means may be defined by an inlet end portion of the conduit.

The closure may be in the form of a closure piece that is connected to the inlet end portion. The closure piece may be connected to the inlet end portion with a weakened zone to facilitate removal of the closure piece.

- 5 The drainage accessory may include a grate that is receivable in the inlet end portion once the closure piece has been removed.

Thus, according to a sixth aspect of the invention there is provided a grate that includes a grate member that is shaped to be received in the inlet end portion of  
10 any of the drainage accessories described herein.

The grate member may be an assembly of a grate frame and a grate element.

The grate frame may define an inwardly extending lip on which the grate  
15 element is supported. The grate element may define a shoulder that bears against the lip of the grate frame.

The closure piece and thus the weakened zone may be substantially rectangular. It follows that the grate frame may also be rectangular. The grate  
20 frame may be in the form of a rectangular plate having a circular opening defined therein. Thus, the grate element may be circular. Instead, the grate frame may be in the form of a rectangular plate having a rectangular opening defined therein. Thus, the grate element may be rectangular.

- 25 The drainage accessory may be of a plastics material. It follows that the grate of this invention may also be of a plastics material.

According to a seventh aspect of the invention, there is provided a sealing member that includes

- 30 a body portion that defines a passage; and  
a flange portion that extends from the body portion wherein the body portion is mountable to the conduit of any of the accessories of the invention to bring the passage into fluid communication with the outlet

end of the conduit and so that the flange portion extends outwardly from the conduit.

The sealing member may be of a suitable sealing material such as an elastomeric material.

Drainage accessories in accordance with this invention may manifest themselves in a variety of forms. It will be convenient hereinafter to describe in detail some preferred embodiments of the invention with reference to the accompanying drawings. The purpose of this specific description is to instruct persons having an interest in the subject matter of the invention how to carry the invention into practical effect. It is to be clearly understood however that the specific nature of this description does not supersede the generality of the preceding broad description. In the drawings:

FIG 1 shows a conduit for a drainage accessory, in accordance with the invention;

FIG 2 shows a schematic side view of the drainage accessory;

FIG 3 shows one embodiment of a grate of a kit, also in accordance with the invention, for the drainage accessory;

FIG 4 shows a schematic side view of the grate;

FIG 5 shows a plan view of the grate, in position;

FIG 6 shows a plan view of a conduit of the kit;

FIG 7 shows a side view of the conduit of FIG 6;

FIG 8 shows a side sectioned view of a seal member of the kit;

FIG 9 shows a side view of the seal member of FIG 8;

FIG 10 shows a side view of another embodiment of the accessory;

FIG 11 shows a side sectioned view of another embodiment of a seal member for use with the embodiment of FIG 10; and

FIG 12 shows a side view of the seal member of FIG 11.

In FIG 2, reference 10 generally indicates a drainage accessory, in accordance with the invention. A conduit 12 of the accessory 10 is shown in FIG 1.

The accessory 10 is mounted on an existing drainpipe 14. The accessory 10 includes a seal member or puddle flange 16. The puddle flange 16 includes a body portion 18 and a flange portion 20.

- 5 The body portion 18 defines a passage 22. A lower end 24 of the body portion 18 is received in the drainpipe 14.

10 An outlet end portion 26 of the conduit 12 is received in the drainpipe 14. The lower end 24 of the body portion 18 of the puddle flange 16 is sandwiched between the outlet end portion 26 of the conduit 12 and a wall 28 of the drainpipe 14.

15 The puddle flange 16 is dimensioned so that, when the lower end 24 of the puddle flange 16 is in position, the flange portion 20 overlays a region of a substructure in the form of a slab 30 surrounding the drain pipe 14.

20 The conduit 12 includes a reference level means in the form of an enlarged inlet end portion 32. It will be appreciated that a shoulder 34 is defined at a junction between the inlet end portion 32 and the outlet end portion 26. The inlet end portion 32 is dimensioned so that the shoulder 34 bears against the flange portion 20 of the puddle flange 16 so that the flange portion 20 is sandwiched between the shoulder 34 and the slab 30.

25 The puddle flange 16 is of a suitable sealing material, and, in particular, is of an elastomeric material. This provides a sealing effect between the slab 30 and the inlet end portion 32.

In FIGS 3, 4 and 5, there is shown a grate 36 in accordance with the invention. The grate 36 is an assembly of a grate frame 38 and a grate element 40.

30

The grate frame 38 is rectangular and defines a circular opening 42. In particular, the grate frame 38 defines an inwardly extending lip 44 positioned on a periphery 46 of the opening 42.

The grate element 40 has a circular cylindrical body 48 that is dimensioned to fit snugly through the opening 42. An upper end 50 of the grate element 40 has an enlarged diameter so that a shoulder 52 is defined at a junction between the upper end portion 50 and the remainder of the body 48. The shoulder 52 is positioned to bear against the lip 44, in use. Furthermore, the upper end portion 50 is of a suitable thickness so that the grate element 40 is flush with the grate frame 38.

As can be seen in FIG 6, the conduit 12 has a removable closure 54 positioned on an inlet end 56 of the conduit 12. The removable closure 54 is in the form of a blank 58 connected to the conduit 12 via a line of weakness 60. The line of weakness 60 is such that cutting of the blank 58 away from the conduit 12 is facilitated. The line of weakness 60 is circular and demarcates a cross sectional area that is equivalent to a cross sectional area of a lower portion 62 of the grate element 40.

As can be seen in FIG 2 and FIG 10, the grate frame 38 rests on top of the enlarged inlet end portion 32. In this position, the grate element 40 extends downwardly through a resultant opening 64 that is defined when the removable closure 54 is removed.

In a floor structure, there is provided a slab level 66, a bedding level 68 and a tile level 70. The thickness of the inlet end portion 32 is such that the height of bedding to be laid on the slab 30 corresponds with the height of an upper surface 72 of the inlet end portion 32 when the inlet end portion 32 is in position.

A thickness of the grate frame 38 corresponds to a distance between the bedding level 68 and the tile level 70.

It will therefore be appreciated that the inlet end portion 32 serves as a reference level for a tiler laying the bedding.

Once the bedding has been laid, the tiles are placed on the bedding. The tiles are then cut and shaped to suit the grate 36. The area is then cleaned of any

debris. The closure 54 is then cut away from the inlet end portion 32. The grate 36 is placed as shown in FIGS 2 and 10. The fact that the thickness of the grate frame 38 corresponds to the distance between the bedding level 68 and the tile level 70 serves to provide a substantially flush finish.

5

Tiles are usually rectangular. Thus, the rectangular grate frame 38 facilitates accurate cutting of the tiles and reduces the amount of time spent by a tiler in correctly shaping the tiles in the region of the drainage accessory 10.

10 A plurality of drainage openings 74 are defined in the inlet end portion 32 proximate the shoulder 34. The drainage openings 74 are positioned so that, when the conduit 12 is in position on the drain pipe 14 and prior to the bedding and the tiles being laid, any water accumulating in the region of the drainpipe 14 is drained away via the openings 74.

15

The drainage accessory 10 can be supplied in the form of a kit, also in accordance with the invention. The kit can include the conduit 12 and the puddle flange 16. In addition to the conduit 12 and puddle flange 16, the kit can also include the grate 36. It will thus be appreciated that the puddle flange 16 will be particularly shaped to suit the conduit 12. Still further, the grate 36 will also be shaped and configured to suit the conduit 12.

20

A particular advantage of providing the accessory 10 in the form of a kit is that a plumber will be in a position to install all the components necessary for drainage without having to source various components from different suppliers.

25

The conduit 12 and the grate frame 38 are of a plastics material.

30

In the example described above and as can be seen in the drawings, the conduit 12 is provided in two different sizes. It follows that the puddle flange 16 is also provided in two different configurations. One of the configurations is shown in FIG's 8 and 9, while the other configuration is shown in FIG's 11 and 12. It should be noted that the invention is in no way restricted to these two sizes and that they have been given only by way of illustration.

Further, the puddle flange 16 can be dimensioned so that the lower end can either fit over an end of one form of standard drainpipe or within an end of another form of standard drainpipe.

5

It will of course be realised that the above has been given only by way of illustrative example of the invention and that all such modifications and variations thereto as would be apparent to persons skilled in the art are deemed to fall within the broad scope and ambit of the invention as is herein set forth.

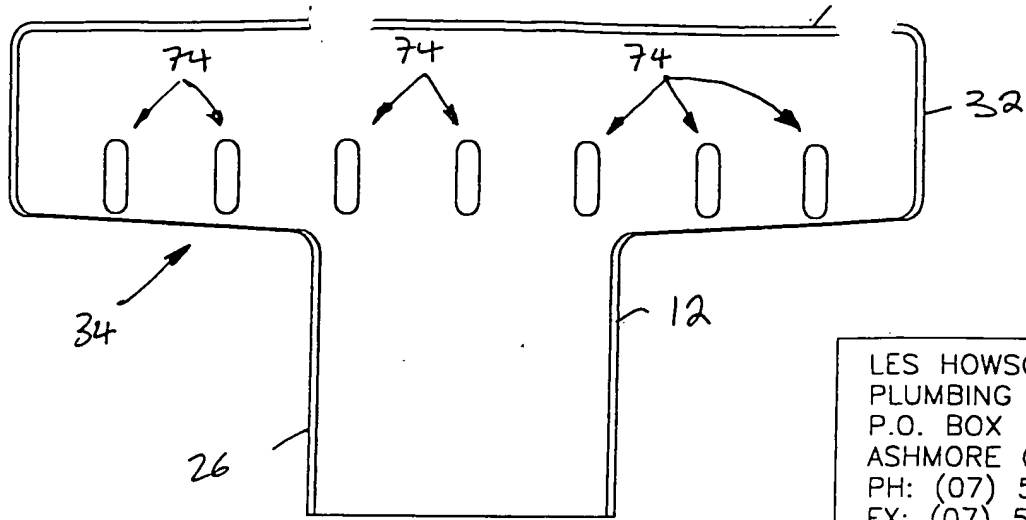
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DATED THIS EIGHTH DAY OF DECEMBER 1999

ELFBLEND PTY LTD

BY

15 PIZZEYS PATENT AND TRADE MARK ATTORNEYS



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## SECTION A-A

FIG 1

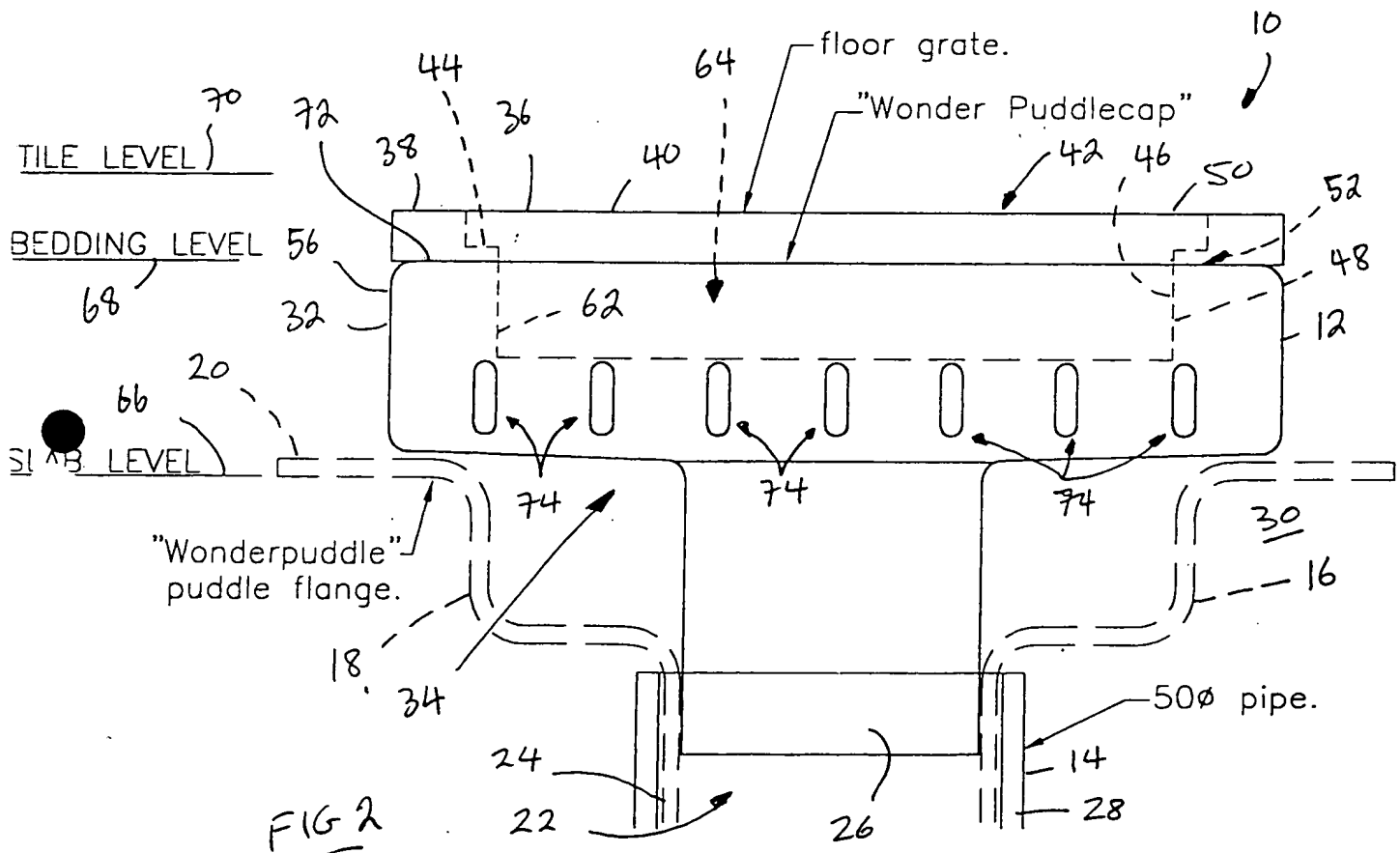
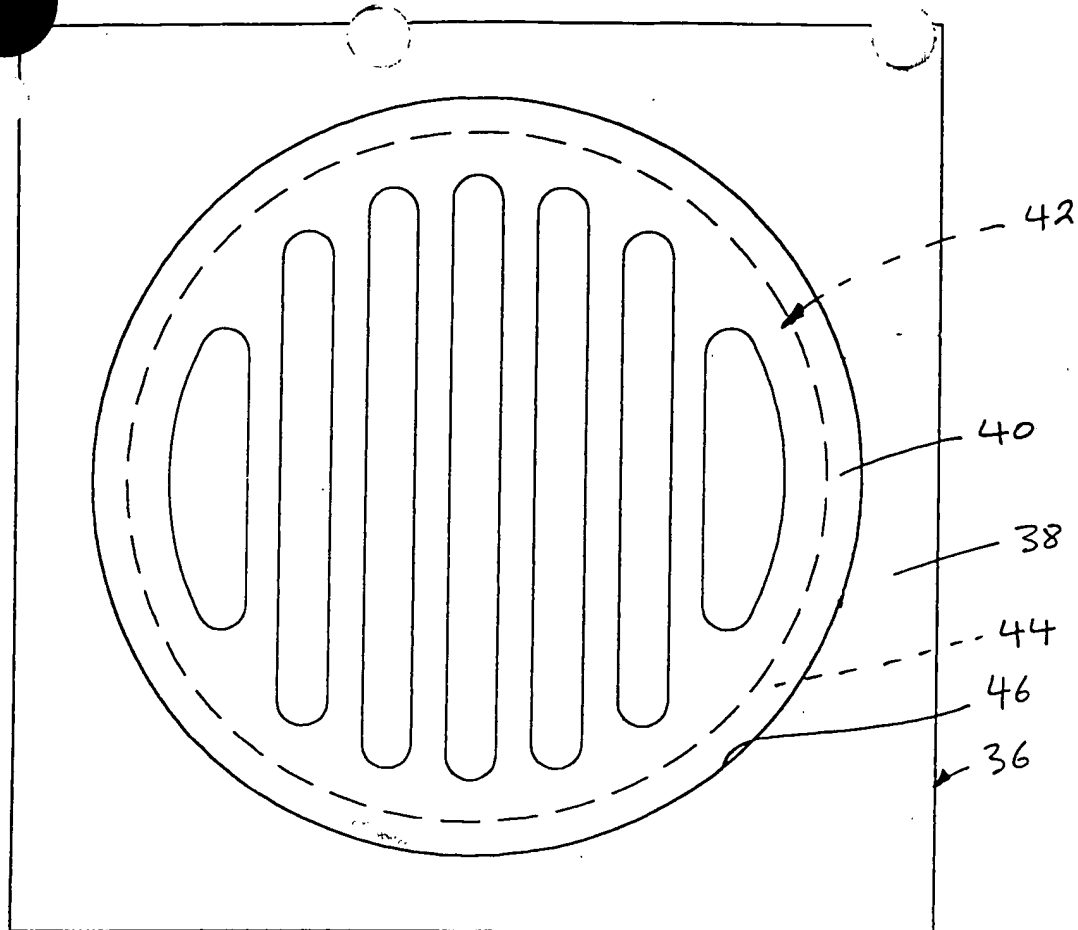


FIG 2

## TYPICAL INSTALLATION -

"WONDER PUDDLECAP" & "WONDERPUDDLE"  
IN 50mm PIPE

A

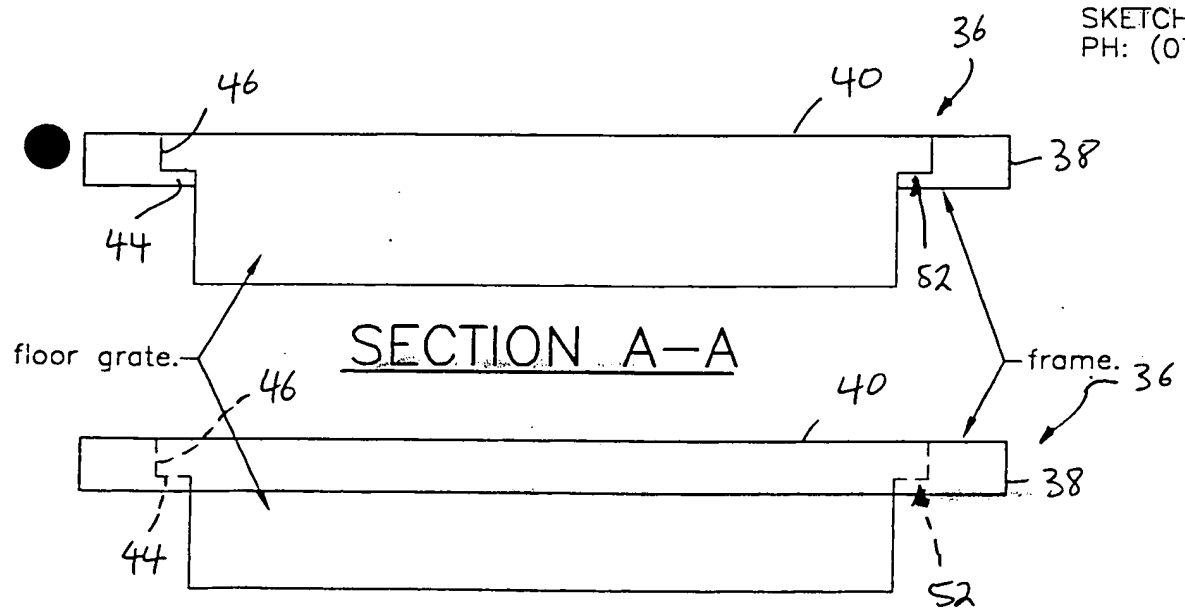


A  
PLAN

FIG 3

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SECTION A-A

ELEVATION

FLOOR GRATE & FRAME

FIG 4

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ROUND GRATE

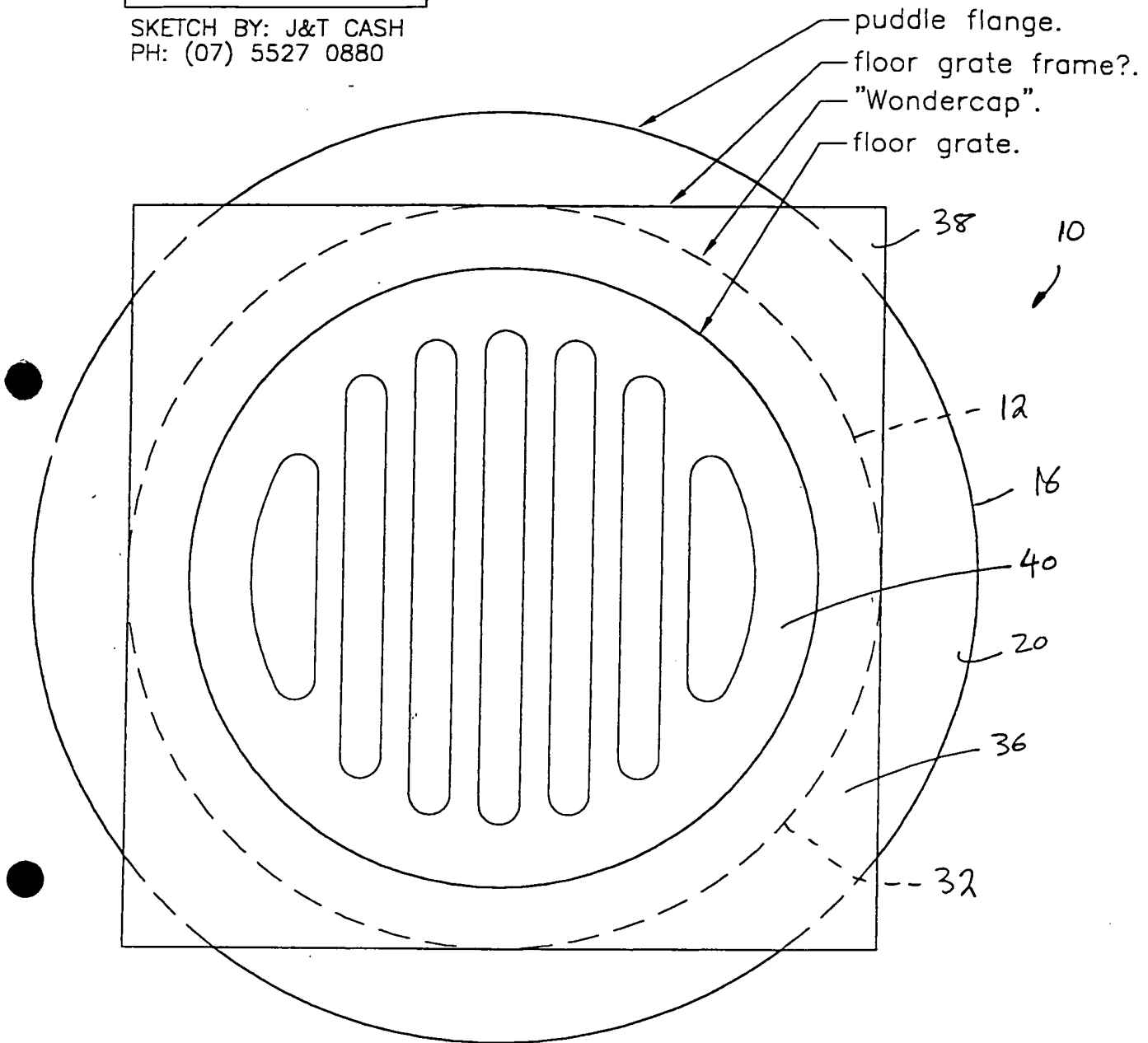
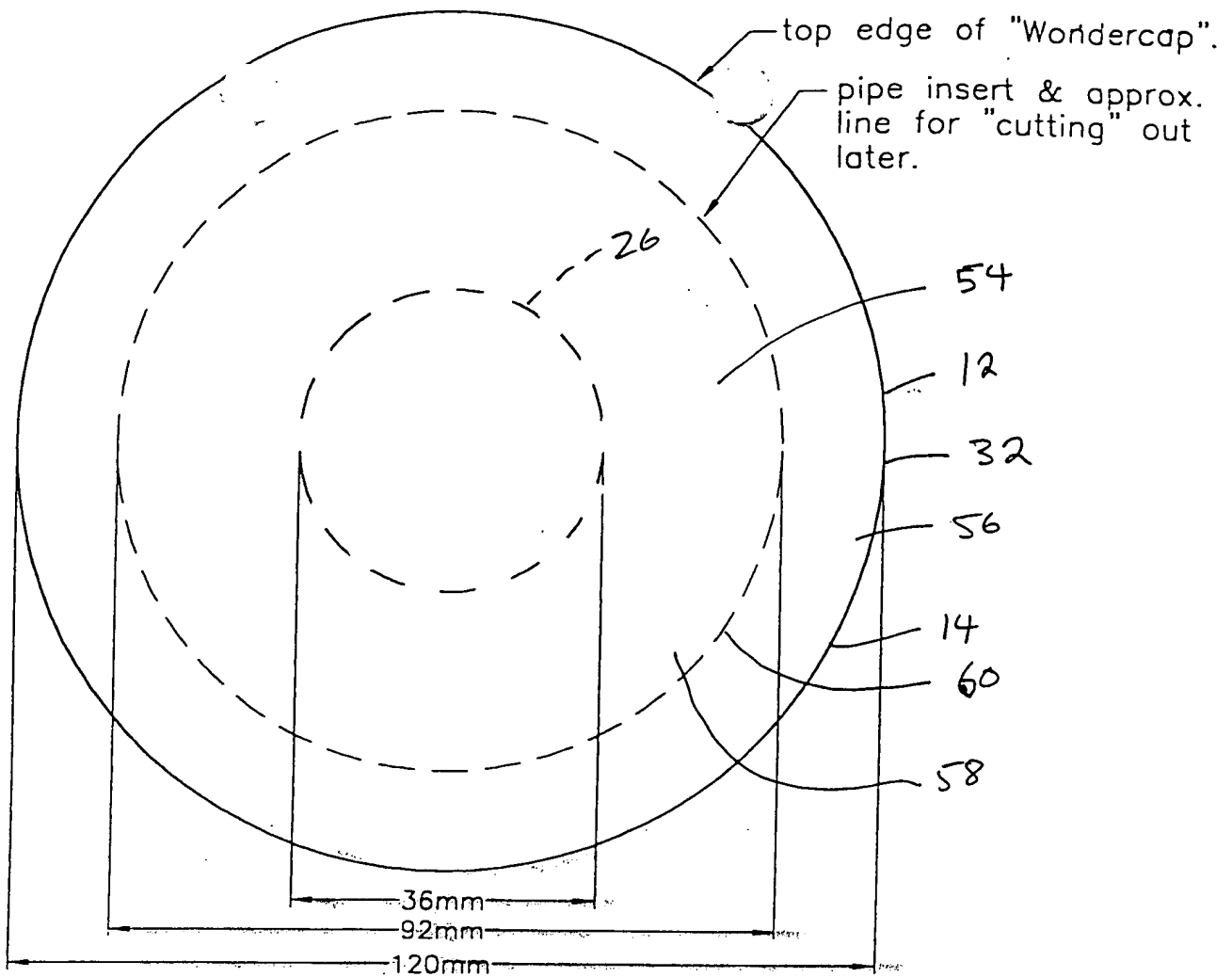
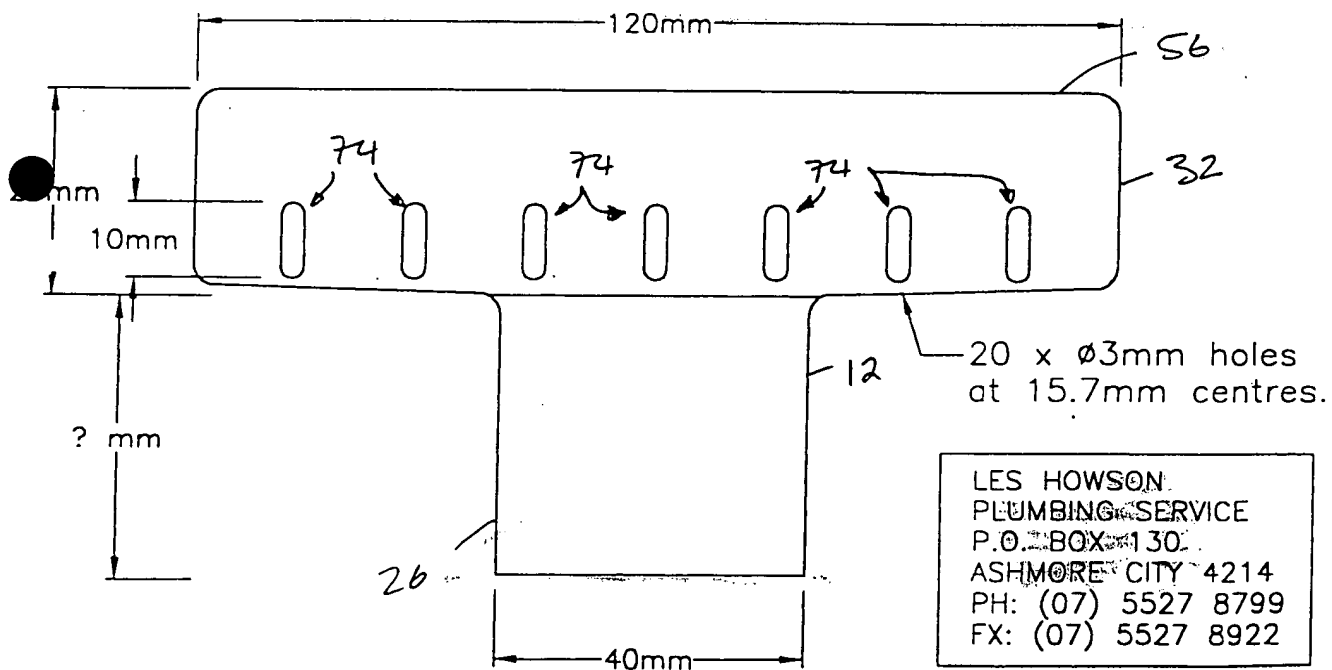


FIG 5

TYPICAL INSTALLATION —  
"WONDER PUDDLECAP" & "WONDERPUDDLE"  
WITH GRATE IN 50Ø PIPE



PLAN FIG 6



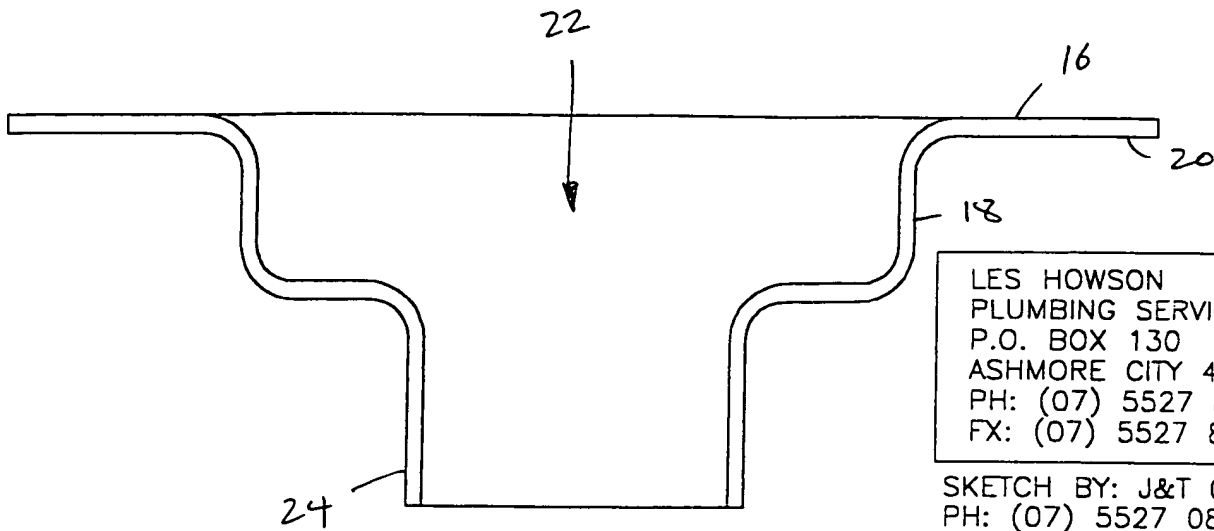
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FIG 7

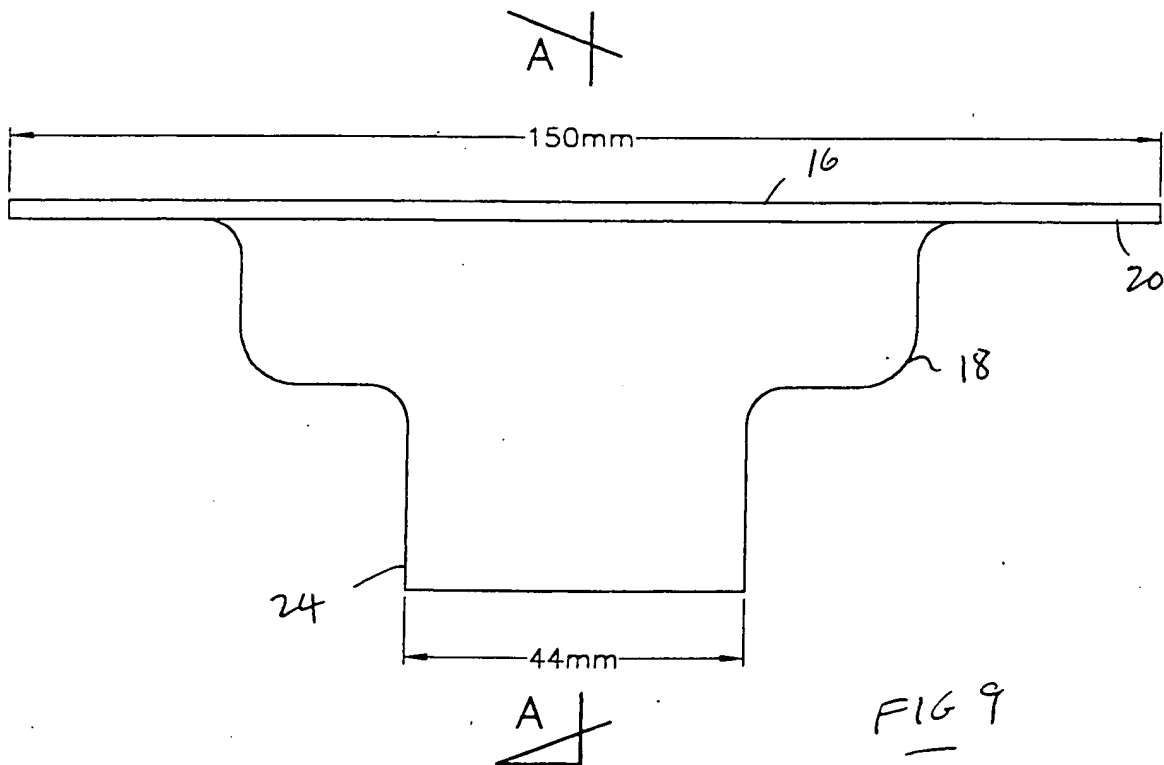


ELEVATION



SECTION A-A

FIG 8



ELEVATION

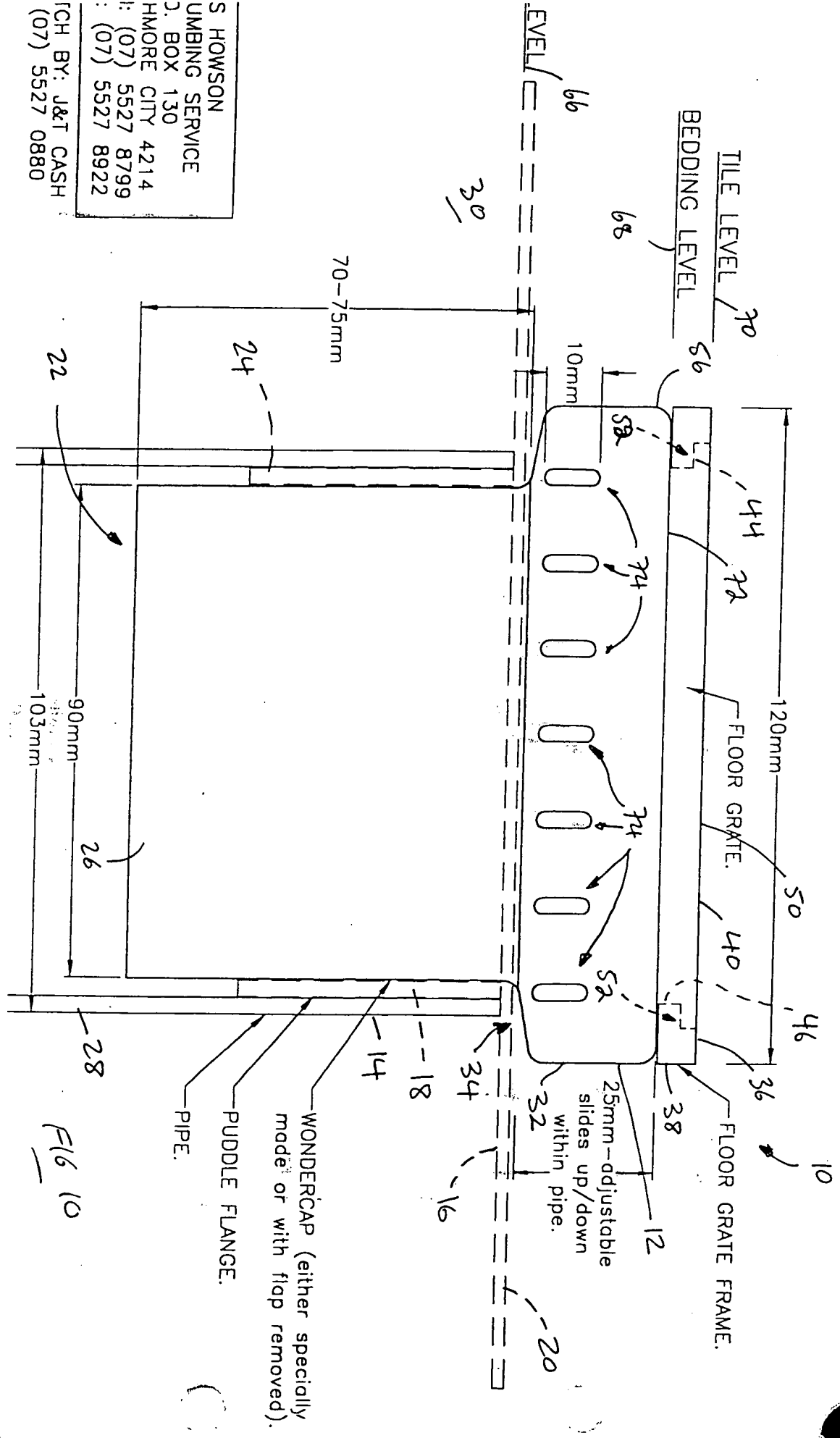
FIG 9

UNIVERSAL PUDDLE FLANGE

(FITS OVER 40mm PIPE & INSIDE 50mm PIPE)

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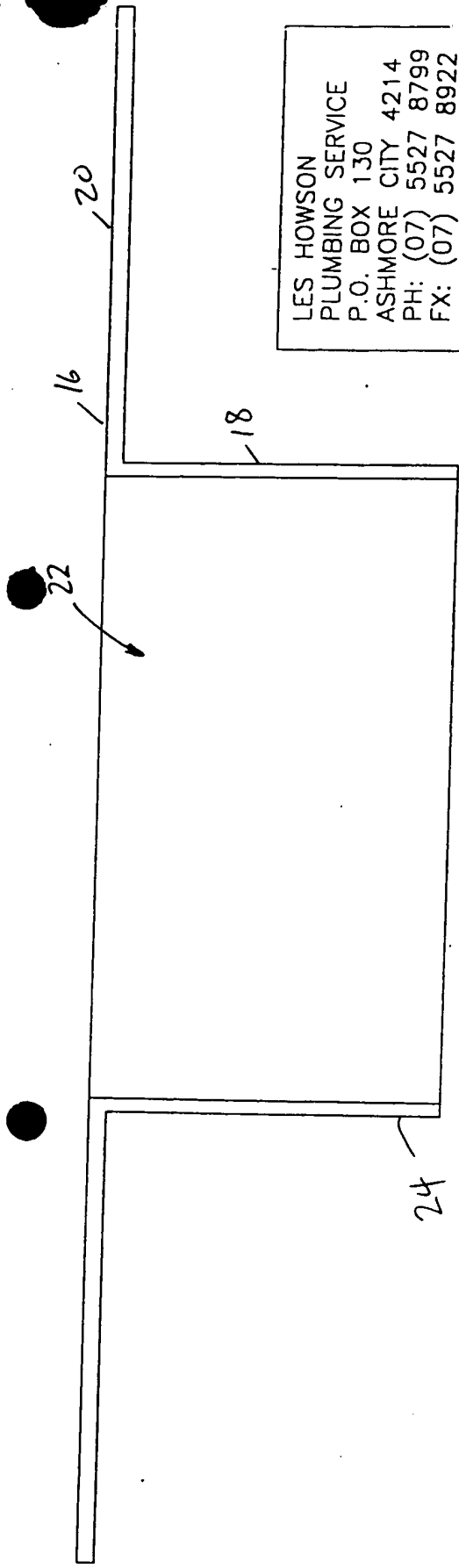
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TYPICAL INSTALLATION -

"WONDER PUDDLECAP" & "WONDERPUDDLE"

WITH GRATE IN 100Ø PIPE



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SECTION A-A

FIG 11

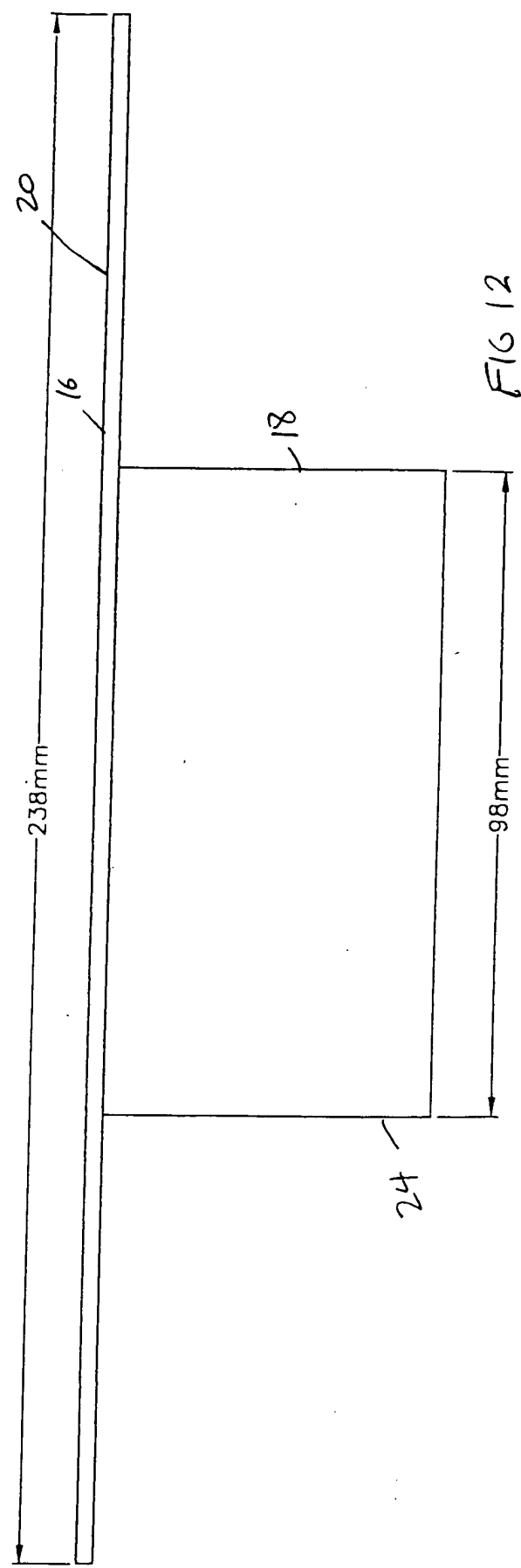


FIG 12



100Ø PUDDLE FLANGE  
 (FITS INSIDE 100mm PIPE)

ELEVATION

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